Ernst & Young LLP

Ameritech Illinois
Illinois 271 Performance
Measurement Examination

Scope and Approach Document

Operational Support Systems (OSS)
Performance Measurement Examination
For the months of March, April, and May 2002

October 31, 2002

Illinois 271 Performance Measurement Examination

Background

SBC Ameritech ("AIT") requested an independent assessment of AIT's performance measurement policies, practices, and processes used in the reported performance results based on the approved Performance Metrics and Standards in accordance with the Illinois Commerce Commission's Tariff: ILL CC. No. 20 - Part 2 - Section 10 - Section E, and referred to as Version 1.8_09_2001 ("Business Rules"). The purpose is to evaluate whether AIT's performance results are calculated and reported accurately and in compliance with the Business Rules. This independent assessment will be performed in accordance with the Illinois Commerce Commission's ("ICC") Master Test Plan, Version 2.0, dated May 2, 2002. To accomplish this objective, Ernst & Young ("E&Y") will perform the following attestation examination engagements in accordance with the attestation standards established by the American Institute of Certified Public Accountants:

1. Attestation Examination of the Accuracy and Completeness of SBC Ameritech's Performance Measurements for a three month period in accordance with the Business Rules

2. Attestation Examination of the Effectiveness of Controls over SBC Ameritech's Process to Calculate Performance Measurements for a three month period

   a. Reports listed in 1 and 2 cover the following Master Test Plan Sections: certain aspects of PMR 1 (data collection only), and all of PMR 4 and PMR 5.
   b. Reports cover the 150 Performance Measurements ("PMs"), as contained in the Business Rules.
   c. Testing Approach.
      i. Documentation of the Process and Controls to Capture, Calculate, and Report Each Performance Measurement.
      ii. Site Visits and Testing of Processes to Capture PM Data.
      iii. Program Code Review – Review of Code to determine Business Rules were appropriately applied.
      iv. Transaction Testing – Statistical sampling of transactions for each performance measurement category to verify that raw data from the source systems was appropriately processed (i.e., Business Rules coding was appropriately applied and data was accurate) and captured in the PM reporting files (i.e., appropriately included/excluded in PM).
      v. Recalculations – Utilizing Detailed Processed Data Files (i.e., after application of Business Rules), E&Y will recalculate the numerator, denominator, and result for each level of disaggregation

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for each PM reported. Additionally, E&Y will recalculate the corresponding z-scores for one month of the three-month review period.

vi.   Analytical Review – Fluctuations in each PM disaggregation will be analyzed to determine the reasonableness of reported results.

Scope and Approach Summary

E&Y will perform procedures necessary to evaluate and validate the data collection processes used by AIT in reporting on its performance measures for Illinois for a three-month period. Our testing will not evaluate or determine whether AIT has "passed" specific performance measures. Rather, we will focus on whether the underlying process AIT used to collect and process data used in measuring its performance was accurate in all material respects in accordance with the Business Rules.

For PMs based on mechanized systems, our approach will include a review of the underlying programming code, as well as transaction testing of the underlying data. As a result of this type of approach, error conditions not otherwise uncovered through transaction testing samples are subjected to the testing processes involved in programming code verification.

Scope and Approach

Our examination will test the Operational Support Systems ("OSS") utilized by AIT and competing local exchange carriers ("CLECs") for processing transactions, systems used for collection of performance measure data, and the performance measure reporting systems. In addition, our examination will include a review of the manual processes utilized by AIT in generating performance measures.

Our examination will cover the performance measurements as identified in the Business Rules. The procedures will be performed in accordance with the ICC's Master Test Plan as outlined below.

Process Flows and Activity Dictionaries

E&Y will validate the integrity of data used throughout the PM generation process by reviewing each of the significant applications where data originates, was stored, or was reported on PMs. For each application, E&Y will identify the various transaction types and systems utilized that directly impact the reported PMs. Upon identification of transaction types, E&Y will determine how each transaction type was initiated, captured by AIT's OSS, and processed through AIT's OSS and PM reporting systems. This process will also identify where and how AIT applies the Business Rules to each transaction and which intermediate applications house specific PM information.

Once the above information is obtained for each PM under review, E&Y will create process flowcharts and activity dictionaries. The purpose of the process flows is to document E&Y's understanding of the data flow for each PM and each transaction type.

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The purpose of the activity dictionaries is to provide supplemental information regarding the process flows identifying critical controls and data inputs and outputs to each system utilized throughout the process. The procedures to be performed in developing the Process Flows and Activity Dictionaries cover Master Test Plan Sections: PMR 1 (data collection only), PMR 4, and PMR 5.

Site Visits

E&Y will identify manual processes utilized by AIT in generating performance measures. This portion of the review will include site evaluations at AIT's Local Operations Center, Local Service Centers, Maintenance Centers, and retail call centers and field visits with AIT technicians within Illinois. During these visits, we will observe various transactions including the process by which customers switch local telephone service providers, the service order entry process, issuance of trouble tickets to the field forces, and the manner in which AIT's technicians actually complete their assigned work and code transactions within the system, including jeopardy codes. Additionally, during these visits we will interview location managers and obtain all relevant operational documentation including education and training policies and procedures, quality assurance policies and procedures, and employee hiring and review processes and procedures.

The purpose of the site visit is to document E&Y's understanding of the manual processes and procedures and to document controls over these manual processes of data input. Additionally, the transaction observation data collected by E&Y during the site visit will be used to validate the transaction information in the front-end systems. The procedures to be performed in developing the site visit and the transaction tests performed cover Master Test Plan Sections: PMR 1 (data collection only) and PMR 4.

Performance Measure Code Review

E&Y will review the respective programming code that contain the Business Rules (exclusions, inclusions, calculation of the numerator and denominator, and disaggregation rules) within the front-end, intermediate, or reporting systems. E&Y will test the corresponding manual processes. E&Y will compare the code and manual processes to the Business Rules for each PM to determine whether AIT's processes were designed to apply the Business Rules properly. In addition, all changes made to programming code will be reviewed for propriety and to ensure processes and controls were modified to support the code changes. The procedures to be performed in the PM code review cover Master Test Plan Sections: PMR 2, 3, 4, and 5.

To validate the results of the code review, E&Y will perform transaction testing and analytical review procedures as described below to determine that the program code was functioning as designed.

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Transaction Testing

For each of the applications identified through the creation of the process flows, E&Y will identify systems that receive underlying transaction data before the Business Rules (exclusion, inclusion, calculation of numerator and denominator, and disaggregation rules) are applied (i.e., raw data). For each system and transaction type, E&Y will either select a statistical sample of transactions (described below) from the period under examination or, where volumes are low, perform a 100 percent validation of the PM results for the period under examination.

For each sample transaction chosen, E&Y will determine if the Business Rules are applied properly to either include or exclude the transaction from the PM results. For each sample transaction, E&Y will manually apply the Business Rules and determined if the transaction should be included or excluded. For the sample transactions that are determined to be included in the PM result, E&Y will determine the appropriate PM level of disaggregation and review the calculation of the numerator and denominator. E&Y will determine if the included sample transaction was included in the correct month and disaggregation of the posted PM results. Additionally, E&Y will agree PM-related data elements from the sampled transaction to the data included in the PM results. For those transactions that are determined to be excluded, E&Y will document why the transaction was excluded according to the Business Rules. E&Y will then determine that the sampled transaction was not included in the PM results.

Testing will be performed to determine that all data files are appropriately transferred between systems and that no data is lost during the process of generating and reporting PMs.

The procedures to be performed for the transaction testing cover Master Test Plan Sections: PMR 4 and 5.

Transaction Testing – Sampling Approach

E&Y's sampling techniques are further described below:

Based on the understanding of each PM's process flow, including systems utilized and types of transactions processed, E&Y will obtain the underlying PM data for the three month period from the relevant OSS before Business Rules were applied. Once this data is obtained, the data will then be separated into wholesale and retail data for each PM (only wholesale data was obtained for PMs that were benchmark measures) in order to determine the total population size for each PM/transaction type.

If the population size is greater than 5,000 transactions, a random sample of 260 transactions will be chosen in order to make the following statistical observations: If we found 0 errors in a sample of 260, there is a 93% probability that the error rate in the population is less than 1%. If we found 1 error in a sample of 260, we can say with 96.7% probability that the error rate in the population is less than 2%. Finally, if the error rate in the sample is 1% but we could tolerate 4%, a sample of 260 would give us 95% reliability or confidence.

If the population size is less than or equal to 5,000, a random sample of 40 will be chosen in lieu of judgmental sample selection in order to make the following statistical observations: If we reviewed a sample of 40 and found 0 errors, we can say with 92% probability that the error rate in the population is less than 6%. If we found 1 error in a sample of 40, we can say with 92% probability that the error rate in the population is less than 10%, and less than 12% with 96% probability.

If error rates greater than the anticipated error rates were found during testing, E&Y will consider expanding testing to determine the nature of the error and assessed the results of that testing in our planned procedures.

Performance Measure Recalculations

E&Y will obtain the data from the AIT intermediate systems for the three-month period that contained the underlying data after the Business Rules were applied. E&Y will then recalculate the PM results for each PM reviewed. Additionally E&Y will recalculate the corresponding z-scores for one month. Results will then be compared with the results originally posted on the CLEC website for each month.

The recalculation of the PM results includes summarizing numerator and denominator information by disaggregation and then recalculating (dividing numerator by denominator) the results. For each PM, the recalculation for each disaggregation will be validated to the PM Business Rule documentation for completeness of reporting all disaggregations for a PM. The procedures to be performed for PM recalculation testing cover Master Test Plan Sections: PMR 4 and 5.

Performance Measure Analytical Review

E&Y will conduct an analytical review to evaluate the reasonableness of reported results. This review will analyze transaction volumes, fluctuations in results, and reasons for parity or out-of-parity results for the period under examination. The procedures to be performed for PM recalculation testing cover Master Test Plan Sections: PMR 4 and 5.

Restatement Testing

For each PM, E&Y will validate the reason each restatement was made and determine if the restatement impacted our review period. E&Y will review the explanation of the change in the PM result, determine the impact of the restatement on our testing approach, and report restatements as exceptions to compliance with the Business Rules in our Attestation Report. The procedures to be performed for the restatement testing cover Master Test Plan Sections: PMR 4 and 5 and certain aspects of PMR 3.

To the extent errors identified in our testing will be included in restatements made after our testing and before the issuance of our report, we will test to determine the transaction processes were corrected through programming code review and selected manual processing testing.

Reporting

The results of our procedures and testing will be noted within our attestation examination reports. Any material[1] exceptions to compliance with the PM Business Rules will be detailed in our report. Corrective action taken by the Company (i.e., accuracy of restated results or new controls) will also be reported. Separate reports will be issued as noted below:

1. Attestation Examination of the Accuracy and Completeness of SBC Ameritech's Performance Measurements for the three month period

2. Attestation Examination of the Effectiveness of Controls over SBC Ameritech's Process to Calculate Performance Measurements for the three month period

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[1] Exceptions are considered to be material if the exception has greater than a plus or minus five percent impact on the reported performance measure <u>or</u> if parity/benchmark result is impacted.

Appendix A – Testing Universe of PMs

Measure #	Measure Name
Pre-Ordering/Ordering	
1.1	Average Response Time for Manual Loop Make-Up Information
1.2	Accuracy of Actual Loop Makeup Information Provided for DSL Orders
2	Percent Responses Received Within "X" Seconds - OSS Interfaces
4	OSS Interface Availability
5	Percent Firm Order Confirmations (FOCs) Returned Within "X" Hours
5.2	Percentage of Unsolicited FOCs by Reason Code
6	Average Time To Return FOC
7	Percent Mechanized Completions Returned Within One Hour of Completion in Ordering System
7.1	Percent Mechanized Completions Returned Within One Day Of Work Completion
8	Average Time to Return Mechanized Completions
9	Percent Rejects
10	Percent Mechanized Rejects Returned within 1 hour of receipt of reject in Mor
10.1	Percent Mechanized Rejects Returned within One Hour of receipt of Order
10.2	Percent Manual Rejects Received Electronically and Returned Within Five Hours
10.3	Percent Manual Rejects Received Manually and Returned Within Five Hours
10.4	Percentage of Orders Given Jeopardy Notices (prev. MI 1)
11	Mean Time to Return Mechanized Rejects
11.1	Mean Time to Return Manual Rejects that are Received via an Interface
11.2	Mean Time to Return Manual Rejects that are Received thru the Manual Process
12	Mechanized Provisioning Accuracy
13	Order Process Percent Flow Through
13.1	Total Order Process Percent Flow Through
Billing	
14	Billing Accuracy
15	Percent of Accurate and Complete Formatted Mechanized Bills Via EDI or BDT
16	Percent of Usage Records Transmitted Correctly
17	Billing Completeness
18	Billing Timeliness (Wholesale Bill)
19	Daily Usage Feed Timeliness
20	Unbillable Usage
Miscellaneous Administrative	
21.1	Average Time Placed on Hold at LSC
22	Local Service Center (LSC) Grade Of Service (GOS)
24.1	Average Time Placed on Hold at LOC
25	Local Operations Center (LOC) Grade Of Service (GOS)
Provisioning - Resale POTS	
27	Mean Installation Interval

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Measure #	Measure Name
28	Percent POTS/UNE-P Installations Completed Within the Customer Requested Due Date
29	Percent Ameritech Caused Missed Due Dates
30	Percent Ameritech Missed Due Dates Due To Lack Of Facilities
31	Average Delay Days For Missed Due Dates Due To Lack Of Facilities
32	Average Delay Days For Ameritech Caused Missed Due Dates
33	Percent Ameritech Caused Missed Due Dates > 30 days
35	Percent Trouble Reports Within 30 Days (1-30) of Installation
Maintenance - Resale POTS	
37	Trouble Report Rate
37.1	Trouble Report Rate Net of Installation and Repeat Reports
38	Percent Missed Repair Commitments
39	Receipt To Clear Duration
40	Percent Out Of Service (OOS) < 24 Hours
41	Percent Repeat Reports
42	Percent No Access (Percent of Trouble Reports with No Access)
Provisioning - Resale Specials & UNE Loop And Port Combinations	
43	Average Installation Interval
44	Percent Specials Installations Completed Within Customer Requested Due Date
45	Percent Ameritech Caused Missed Due Dates
46	Percent Trouble Reports Within 30 Days (I-30) of Installation
47	Percent Ameritech Missed Due Dates Due To Lack Of Facilities
48	Average Delay Days for Missed Due Dates Due to Lack Of Facilities
49	Average Delay Days For Ameritech Caused Missed Due Dates
50	Percent Ameritech Caused Missed Due Dates > 30 days
Maintenance - Resale Specials & UNE Loop And Port Combinations	
52	Mean Time To Restore
53	Percent Repeat Reports
54	Failure Frequency
54.1	Trouble Report Rate Net of Installation and Repeat Reports
Provisioning - Unbundled Network Elements	
55	Average Installation Interval
55.1	Average Installation Interval - DSL
55.2	Average Installation Interval - LNP with a Loop
55.3	Percent xDSL-Capable Loop Orders Requiring the Removal Load Coils and or Repeaters
56	Percent Installations Completed Within Customer Requested Due Date
56.1	Percent Installations Completed Within the Customer Requested Due Date
58	Percent Ameritech Caused Missed Due Dates
59	Percent Trouble Reports within 30 Days of Installation
60	Percent Ameritech Missed Due Dates Due To Lack Of Facilities
61	Average Delay Days for Missed Due Dates Due To Lack Of Facilities

Appendix A – Testing Universe of PMs

Measure #	Measure Name
62	Average Delay Days For Ameritech Caused Missed Due Dates
63	Percent Ameritech Caused Missed Due Dates > 30 days
Maintenance - Unbundled Network Elements	
65	Trouble Report Rate
65.1	Trouble Report Rate Net of Installation and Repeat Reports
66	Percent of Missed Appointments
67	Mean Time to Restore
68	Percent Out of Service <24 Hours
69	Percentage of Reports Percent Repeat Reports
Interconnection Trunks	
70	Percentage of Trunk Blockage (Call Blockage)
70.1	Trunk Blocking Exclusions
70.2	Percentage of Trunk Blockage (Trunk Groups)
71	Common Transport Trunk Group Blockage
73	Percentage Missed Due Dates - Interconnection Trunks
74	Average Delay Days For Missed Due Dates - Interconnection Trunks
75	Percentage Ameritech Caused Missed Due Dates > 30 Days - Interconnection Trunks
76	Average Trunk Restoration Interval - Interconnection Trunks
77	Average Trunk Restoration Interval for Service Affecting Trunk Groups
78	Average Interconnection Trunk Installation Interval
Directory Assistance & Operator Services	
79	Directory Assistance Grade Of Service
80	Directory Assistance Average Speed Of Answer
81	Operator Services Grade Of Service
82	Operator Services Speed Of Answer
83	Percentage of Calls Abandoned
Local Number Portability	
91	Percent of LNP Due Dates within Industry Guidelines
92	Percentage of Time the Old Service Provider Releases the Subscription Prior to the Expiration of the Second 9 Hour (T2) Timer
93	Percentage of Customer Accounts Restructured by the LNP Due Date
95	Average Response Time for Non-Mechanized Rejects Returned With Complete and Accurate Codes
96	Percentage Pre-mature Disconnects for LNP Orders
97	Percentage of Time Ameritech Applies the 10-digit Trigger Prior to the LNP Order Due Date
98	Percentage Trouble LNP (I-Reports) in 30 Days
99	Average Delay Days for Ameritech Missed Due Dates (For Stand-Alone LNP Orders)
100	Average Time of Out of Service for LNP Conversions
101	Percent Out of Service < 60 minutes

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Appendix A – Testing Universe of PMs

Measure #	Measure Name
911	
102	Average Time To Clear Errors (Reported in IL, IN, OH, WI)
103	Percent Accuracy for 911 Database Updates (Facility-Based Providers) (Reported in IL, IN, OH, WI;)
104	Average Time Required to Update 911 Database (Facility Based Providers) (Reported in IL, IN, OH, WI)
104.1	The average time it takes to unlock the 911 record
Poles, Conduit & Right of Way	
105	Percentage of Requests Processed Within 35 Days
106	Average Days Required to Process a Request
Collocation	
107	Percent Missed Collocation Due Dates
108	Average Delay Days for Ameritech Missed Due Dates
109	Percent of Requests Processed Within the Established Timelines
Directory Assistance Database	
110	Percentage of Updates Completed into the DA Database within 72 Hours for Facility Based CLECs
111	Average Update Interval for DA Database for Facility Based CLECs
112	Percentage DA Database Accuracy For Manual Updates
113	Percentage of Electronic Updates that Flow Through the Update Process Without Manual Intervention
Coordinated Conversions	
114	Percentage of Premature Disconnects (Coordinated Cutovers)
114.1	CHC/FDT LNP with Loop Provisioning Interval
115	Percentage of Ameritech Caused Delayed Coordinated Cutovers
115.1	Percent Provisioning Trouble Reports
115.2	Mean Time to Restore - Provisioning Trouble Report (PTR)
NXX	
117	Percent NXXs loaded and tested prior to the LERG effective date
118	Average Delay Days for NXX Loading and Testing
119	Mean Time to Repair
Bona Fide Request Process (BFRs)	
120	Percentage of Requests Processed Within 30 Business Days
121	Percentage of Quotes Provided for Authorized BFRs Within 45 Business Days
Additional Measures	
MI 2	Percentage of Orders given Jeopardy Notices within 24 hours of the Due Date
MI 3	Coordinated Conversions Outside of the Interval
MI 4	Average Time to Provide a Collocation Arrangement
MI 5	Structure Requests Completed Outside of Interval
MI 9	Percentage Missing FOCs
MI 10	Percent Time-Out Transactions

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Appendix A – Testing Universe of PMs

Measure #	Measure Name
MI 11	Average Interface Outage Notification
MI 12	Average Time to Clear Service Order Errors
MI 13	Percent Loss Notification w/in 1 Hour of Service Order Completion
MI 14	Percent Completion Notifications Returned w/in "x" hours of Completion of Maintenance Trouble Ticket
MI 15	Change Management
MI 16	Percentage Rejected Query Notices
WI 1	Percent No-Access for UNE Loops - Provisioning
WI 2	Percent No-Access for UNE Loops - Maintenance
WI 9	Percent Facility Modification Orders
CLEC WI 1	Average Delay in original FOC due Date
CLEC WI 4	Accuracy of Processing CLEC Corrections based on review of Directory Information
CLEC WI 5	Percentage of Protectors not moved after Technician Visit
CLEC WI 6	FMOD Process: Percent of Form A received w/in the interval
CLEC WI 7	FMOD Process: Percent of Form B, C, D, and E received w/in 72 hours of Form A
CLEC WI 8	FMOD Process: Percent of Form B returned FOC within 24 hours
CLEC WI 9	FMOD Process: Percent of Form C return quote w/in the interval
CLEC WI 11	FMOD Process: Percent Due Date Met
IN 1	Percent Loop Acceptance Test Completed on or Prior to the Completion Date

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